

IN THE CLAIMS

What is claimed is:

1. A method for sending video and audio data through a network, the method comprising the computer-implemented acts of:

5 sending said video and audio data in uncompressed form through said network;
using a multicast protocol for sending said video and audio data for sending said video and audio data; and
using an error correction to reduce packet loss when sending said video and audio data.

10 2. A method of transferring data comprising:

receiving a first video data stream at a first machine;
multicasting the first video data stream in uncompressed and raw form through a network;
receiving the first video data stream at a second machine; and
playing the first video data stream on the second machine.

15 3. The method of claim 2, wherein:

the first video data stream includes audio data.

4. The method of claim 2, further comprising:

20 receiving the first video data stream at a third machine; and
playing the first video data stream on the third machine.

5. The method of claim 4, further comprising:

25 receiving the first video data stream at a fourth machine; and
playing the first video data stream on the fourth machine.

6. The method of claim 2, further comprising

receiving a second video data stream at the second machine;
multicasting the second video data stream in uncompressed and raw form through the network;
30 receiving the second video data stream at the first machine; and
playing the second video data stream on the first machine.

7. The method of claim 6, further comprising:
receiving the second video data stream at a third machine; and
playing the second video data stream on the third machine.

5 8. The method of claim 7, further comprising:
receiving the first video data stream at the third machine; and
playing the first video data stream on the third machine.

10 9. The method of claim 2, further comprising:
selecting a website at the first machine;
displaying the website at the first machine; and
displaying the website at the second machine.

15 10. The method of claim 9, further comprising:
displaying the website at a third machine.

20 11. The method of claim 10, further comprising:
receiving the first video data stream at a third machine; and
playing the first video data stream on the third machine.

25 12. The method of claim 11, further comprising
receiving a second video data stream at the second machine;
multicasting the second video data stream in uncompressed and raw form through the network;
receiving the second video data stream at the first machine;
playing the second video data stream on the first machine;
receiving the second video data stream at a third machine; and
playing the second video data stream on the third machine.

30 13. The method of claim 2, wherein:
the network is a local area network.

14. The method of claim 2, wherein:

the network is the internet.

15. The method of claim 2, wherein:
the network is a wide area network.

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16. The method of claim 2, wherein:
the network is an intranet.

17. The method of claim 2, further comprising:
10 multicasting the first video data stream from the second machine back to the first machine.

18. The method of claim 12, further comprising:
multicasting the second video data stream from the first machine back to the second machine.

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19. The method of claim 18, further comprising:
multicasting the second video data stream from the third machine back to the second machine;
and
multicasting the first video data stream from the third machine back to the first machine.

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20. The method of claim 2, wherein:
multicasting includes use of TCP packets and UDP packets in a BDP acknowledgment sequence
to verify delivery.

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21. The method of claim 20, wherein:
TCP packets are sent forward and corresponding UDP packets are sent back responsive to the
TCP packets.

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22. A computer-implemented method of videoconferencing through a network, comprising:
receiving a first video stream at a first machine;
multicasting the first video stream through the network;
receiving the first video stream at a set of machines; and
playing the first video stream on the set of machines.

23. The computer-implemented method of claim 22, further comprising:
multicasting the first video stream from machines of the set of machines back to the first
machine.

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24. The computer-implemented method of claim 22, further comprising
receiving a second video stream at a second machine, the second machine a part of the set of
machines;
multicasting the second video stream through the network;
receiving the second video stream at the set of machines; and
playing the second video stream on the set of machines.

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25. The computer-implemented method of claim 24, further comprising:
multicasting the first video stream from the second machine back to the first machine.

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26. The computer-implemented method of claim 24, further comprising:
multicasting the second video data stream from the first machine back to the second machine.

27. The computer-implemented method of claim 24, further comprising:
multicasting the second video stream from machines of the set of machines back to the second
machine; and
multicasting the first video stream from machines of the set of machines back to the first
machine.

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28. The computer-implemented method of claim 24, further comprising:
selecting a website at the first machine;
displaying the website at the first machine;
displaying the website at the second machine; and
displaying the website on the set of machines.

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29. The computer-implemented method of claim 24, wherein:
the network is a local area network.

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30. The computer-implemented method of claim 24, wherein:
the network is the internet.

5 31. The computer-implemented method of claim 24, wherein:
the network is a wide area network.

32. The computer-implemented method of claim 24, wherein:
the first video stream includes audio data.

10 33. A computer-implemented method of videoconferencing between multiple computers through
a network utilizing a low-bandwidth and low-overhead protocol that avoids the high resource and
high bandwidth requirements of prior videoconferencing methods, comprising:
receiving a first video data stream at a first machine through a user interface of the first machine
15 suitable for capturing video data;
multicasting the first video stream through the network without first compressing the first video
stream and without first translating the first video stream into a non-video stream data format;
receiving the first video stream as multicast through the network at a set of machines; and
playing the first video stream in a manner perceptible to users through a user interface for use by
20 users to perceive images as received at the first machine on the set of machines.

34. An apparatus for videoconferencing, comprising:
means for receiving a first video data stream;
means for multicasting the first video data stream in uncompressed and raw form;
25 means for receiving the multicast first video data stream at a remote location; and
means for playing the multicast first video data stream at the remote location.

30 35. A machine-readable medium having embodied therein instructions, which, when executed
by a processor, cause the processor to perform a method, the method comprising:
receiving a first video data stream at a first machine;
multicasting the first video data stream in uncompressed and raw form through a network;
receiving the first video data stream at a second machine; and

playing the first video data stream on the second machine.

36. The machine-readable medium of claim 35, wherein the method further comprises:
receiving the first video data stream at a third machine; and
5 playing the first video data stream on the third machine.

37. The machine-readable medium of claim 36, wherein the method further comprises:
receiving the first video data stream at a fourth machine; and
10 playing the first video data stream on the fourth machine.

38. The machine-readable medium of claim 35, wherein:
the first video data stream includes audio data.

39. The machine-readable medium of claim 35, wherein the method further comprises:
15 receiving a second video data stream at the second machine;
multicasting the second video data stream in uncompressed and raw form through the network;
receiving the second video data stream at the first machine; and
playing the second video data stream on the first machine.

40. The machine-readable medium of claim 39, wherein the method further comprises:
20 receiving the second video data stream at a third machine; and
playing the second video data stream on the third machine.

41. The machine-readable medium of claim 40, wherein the method further comprises:
25 receiving the first video data stream at the third machine; and
playing the first video data stream on the third machine.

42. The machine-readable medium of claim 35, wherein the method further comprises:
selecting a website at the first machine;
30 displaying the website at the first machine; and
displaying the website at the second machine.

43. The machine-readable medium of claim 42, wherein the method further comprises:
displaying the website at a third machine.

44. The machine-readable medium of claim 43, wherein the method further comprises:
receiving the first video data stream at a third machine; and
playing the first video data stream on the third machine.

45. The machine-readable medium of claim 44, wherein the method further comprises:
receiving a second video data stream at the second machine;
multicasting the second video data stream in uncompressed and raw form through the network;
receiving the second video data stream at the first machine;
playing the second video data stream on the first machine;
receiving the second video data stream at a third machine; and
playing the second video data stream on the third machine.

46. The machine-readable medium of claim 35, wherein:
the network is a local area network.

47. The machine-readable medium of claim 35, wherein:
the network is the internet.

48. The machine-readable medium of claim 35, wherein:
the network is a wide area network.

49. The machine-readable medium of claim 35, wherein the method further comprises:
multicasting the first video data stream from the second machine back to the first machine.

50. The machine-readable medium of claim 45, wherein the method further comprises:
multicasting the second video data stream from the first machine back to the second machine.

51. The machine-readable medium of claim 50, wherein the method further comprises:

multicasting the second video data stream from the third machine back to the second machine;
and
multicasting the first video data stream from the third machine back to the first machine.

5 52. The machine-readable medium of claim 35, wherein:
multicasting includes use of TCP packets and UDP packets in a BDP acknowledgment sequence
to verify delivery.

10 53. The machine-readable medium of claim 35, wherein:
TCP packets are sent forward and corresponding UDP packets are sent back responsive to the
TCP packets.

54. An apparatus for videoconferencing, comprising:
a user interface having a video capture component and a video display component;
15 a processor coupled to the user interface to control the video capture component and receive data
from the video capture component and to control the video display component and send data to
the video display component;
a network interface coupled to the processor to receive data from the video capture component
and to multicast to a network the data from the video capture component,
20 the network interface further to receive multicast video data from the network and to send
multicast data to the processor for use with the video display component.

55. The apparatus of claim 54, wherein:
the user interface further having an audio data capture component and an audio data output
25 component;
the processor further to control the audio data capture component and receive data from the audio
data capture component and to control the audio data output component and send data to the
audio data output component;
the network interface further to receive data from the audio data capture component and to
30 multicast to a network the data from the audio data capture component, the network interface
further to receive multicast audio data from the network and to send multicast audio data to the
processor for use with the audio data output component.

56. The apparatus of claim 54, wherein:
the video capture component is a video camera.

5 57. The apparatus of claim 54, wherein:
the video output component is a display.

58. The apparatus of claim 54, wherein:
the network interface is a LAN card.

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59. The apparatus of claim 54, wherein:
the network interface is a modem.

15 60. The apparatus of claim 55, wherein:
the audio data capture component is a microphone.

61. The apparatus of claim 55, wherein:
the audio data output component is a speaker.

20 62. The apparatus of claim 54, wherein:
the network interface is to send TCP acknowledgment packets and to receive UDP
acknowledgment packets.

25 63. The apparatus of claim 54, wherein:
the network interface is to use TCP acknowledgment packets and corresponding UDP
acknowledgment packets.

30 64. A method of acknowledging transmission, comprising:
transmitting a TCP control packet; and
receiving a corresponding UDP acknowledgment packet.

65. The method of claim 2, wherein:

multicasting includes use of acknowledgment packets without additional data to verify delivery.

66. The method of claim 2, wherein:

multicasting includes use of TCP packets and acknowledgment packets in a BDP

5 acknowledgment sequence to verify delivery, the acknowledgment packets including no additional payload.